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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,114	08/29/2003	Jay K. Bass	10004187-3	1844

7590 11/30/2007

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EXAMINER	
FORMAN, BETTY J	
ART UNIT	PAPER NUMBER
1634	

MAIL DATE	DELIVERY MODE
11/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/652,114	BASS ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30 and 32-50* is/are pending in the application.

4a) Of the above claim(s) *40-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30,32-39 and 44-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 17 September 2007 in which claims 30, 38, 44, 48-49 were amended and claim 50 was added. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 19 June 2007 are withdrawn in view of the amendments.

Applicant's arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection. New grounds for rejection, necessitated by the amendments, are discussed.

Claims 30, 32-39, 44-50 are under prosecution.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 30, 32-34, 39, 50 are rejected under 35 U.S.C. 103(a) as obvious over Blanchard (WO 98/41531, published 24 September 1998) in view of Zuckerman et al (WO 91/17823, published 28 November 1991).

Regarding Claim 30, Blanchard discloses an apparatus for biopolymer array synthesis (Fig. 5), the apparatus comprising a plurality of flow cells (page 74, line 32-page 75, 20), the flow cells comprising a chamber (#80, fig. 9) and a holder for the support (plate #70) wherein

the support is a flat glass (page 57, lines 5-13) and the array comprises a plurality of biopolymer features in a pattern on the surface (2-d array, page 57, lines 5-7). Blanchard further discloses the apparatus comprising a fluid dispensing station in fluid communication with the flow cells (inlets in communication with solvent containers via valves and tubing, page 66, lines 2-12) a station for monomer addition, (print head assembly #24) and a mechanism for moving a support to and from the monomer addition station and a flow cell (scanning transport, #22 and treating transport #23) wherein the mechanism comprises a robotic arm (computer controlled transport arms, page 74, lines 8-31) and a holding element comprising a grasping element (grooved vacuum chuck , page 61, lines 21-32 and page 66, line 25-page 67, line 8). Blanchard teaches the apparatus comprises a controller for controlled movement of the mechanism (computer controlled transport arms, page 74, lines 8-31). Blanchard further teaches the computer comprises software programs for moving and positioning the support between various components via the transporters (page 69, lines 15-25, page 70, line 28-page 71 and Fig. 11) and specifically teaches repeatedly moving the substrate between the print head assembly and flow cell (page 71, lines 3-5 and Page 72, line 27-page 73-17).

Blanchard does not specifically teach the controller is programmed for causing the robotic arm to more a substrate from one flow cell to a different flow cell. However, programmed movement of a robotic arm for substrate transfer to and from different flow cells was well known at the time the claimed invention was made as taught by Zuckerman.

Zuckerman teaches an apparatus for polymer synthesis comprising a plurality of flow cells, each comprising a holder for support, the apparatus further comprising fluid dispensing stations, a robotic arm for moving a support to and from flow cells for monomer addition and wherein the robotic arm has grasping elements (page 15, lines 1-11) and wherein the apparatus further comprise a controller having a program configured for moving the robotic arm so as to transfer the support from one flow cell to a different flow cell (page 17-20, Fig. 6-7). Zuckerman further teaches the multiple flow cell apparatus with programmed transfer of

supports provides automated synthesis of equimolar amounts of mixed-sequence biopolymers that ensures complete subunit coupling with minimal time (page 21).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to provide the transporters of Blanchard with a program to configured to move the substrate from one flow cell into different flow cell. Blanchard teaches the method of synthesis in Example 2, which substrate treatments include 19 iterations monomer addition including rinsing steps with intervening dipping and/or submerging steps. This clearly suggests that the substrates are transported to different flow cells for the (b) acetonitrile rinsing, (c) oxidation, (d) acetonitrile rinsing, (e) dimethoxytrityl deprotecting and (f) acetonitrile rinsing steps. Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was modify the computer-controlled transporters of Blanchard with the program configuration of Zuckerman so as to transport the support from one flow cell to a different flow cell to thereby provide for automated synthesis of equimolar amounts of mixed-sequence biopolymers with complete subunit coupling with minimal time as taught by Zuckerman (page 21).

Regarding Claim 32, Blanchard discloses an apparatus for biopolymer array synthesis (Fig. 5), wherein the apparatus comprise a holding element comprising a grasping element (grooved vacuum chuck , page 61, lines 21-32 and page 66, line 25-page 67, line 8) but is silent regarding finger-like projections on the vacuum chuck. However, Zuckerman teach the similar device wherein the preferred robotic arm has finger-like grippers (page 15, lines 1-11).

Regarding Claim 33, Blanchard teaches the apparatus wherein the flow cells comprise inlet and outlet ports (#83 & #84, Fig. 5).

Regarding Claim 34, Zuckerman teaches the similar apparatus wherein the inlet is coupled to a manifold (page 16, lines 4-11).

Regarding Claims 39 and 50, Blanchard discloses an apparatus for biopolymer array synthesis (Fig. 5), the apparatus comprising a plurality of flow cells (page 74, line 32-page 75,

20) the apparatus comprising a fluid dispensing station in fluid communication with the flow cells (inlets in communication with solvent containers via valves and tubing, page 66, lines 2-12) a station for monomer addition, (print head assembly #24). Blanchard further teaches and illustrates bulk immersion of the substrate into different reagents for the wash and deprotection steps (page 24, lines 6-22 and Fig. 4) which clearly suggests dedicated vessels for the different reagents. Furthermore, Zuckerman teaches the similar device wherein the different reagents are contained in selected vessels (page 17). Given that dedicated reagent-vessels and bulk immersion were well known as was the use of flow cells for steps of the synthesis cycle, it would have been obvious to one of ordinary skill in the art to dedicate flow cells for different reagents for synthesis. One of ordinary skill would have been motivated to do so with a reasonably expectation of success based on the bulk immersion desired by Blanchard and further for the advantage of maintaining a controlled and/or different environment for each step in the process of synthesis.

4. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard (WO 98/41531, published 24 September 1998) in view of Zuckerman et al (WO 91/17823, published 28 November 1991) as applied to Claim 30 above and further in view of Nokihara (U.S. Patent No. 5,362,447, issued 8 November 1994).

Regarding Claims 35-37, Blanchard discloses an apparatus for biopolymer array synthesis wherein the flow cells have an outlet but does not teach a purification system in communication with the outlet. However, automated synthesizers having column purification systems and sensors attached to flow cell outlets were well known in the art at the time the claimed invention was made as taught by Nokihara.

Nokihara teaches the apparatus wherein expensive and toxic reagents are recycled via a purification column (Column 4, lines 19-27) in communication with a sensor (pH sensor, Column 3, lines 58-67) valve switch (Column 4, lines 28-33) and holding chamber (e.g. fraction collector F, Column 3, lines 1-11). Nokihara teaches the purification system reduces costs by "significantly" reducing the amount of starting material consumed and environmentally destructive waste produced (Column 4, lines 34-44). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the sensor and purification system in the synthesizer of Nokihara to the synthesizer of Blanchard. One of ordinary skill in the art would have been motivated to do so for the expected benefits of reducing costs by "significantly" reducing the amount of starting material consumed and environmentally destructive waste produced (Column 4, lines 34-44).

5. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard (WO 98/41531, published 24 September 1998) in view of Zuckerman et al (WO 91/17823, published 28 November 1991) as applied to Claim 30 above and further in view of Kedar (U.S. Patent No. 6,165,778, issued 26 December 2000).

Regarding Claim 38, Blanchard discloses an apparatus for biopolymer array synthesis, wherein the apparatus comprises detecting conditions within the flow cells (Fig. 14 and page 75, lines 1-7) but is silent regarding a sensor in fluid communication with an outlet. However, Kedar teaches an apparatus for array synthesis wherein the apparatus comprises a sensor in fluid communication with the outlet (#111S-119S, Column 74, lines 46-56 and Column 77, lines 35-46) wherein the sensor determines a condition of the reagents (e.g. presence, absence or data) communicates with the controller, which also communicates with the valves.

6. Claims 44-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard (WO 98/41531, published 24 September 1998) in view of Zuckerman et al (WO 91/17823, published 28 November 1991) and Nokihara (U.S. Patent No. 5,362,447, issued 8 November 1994).

Regarding Claims 44-49, Blanchard discloses an apparatus for biopolymer array synthesis (Fig. 5), the apparatus comprising a plurality of flow cells (page 74, line 32-page 75, 20), the flow cells comprising a chamber (#80, fig. 9) and a holder for the support (plate #70) wherein the support is a flat glass (page 57, lines 5-13) and the array comprises a plurality of biopolymer features in a pattern on the surface (2-d array, page 57, lines 5-7). Blanchard further discloses the apparatus comprising a fluid dispensing station in fluid communication with the flow cells (inlets in communication with solvent containers via valves and tubing, page 66, lines 2-12) a station for monomer addition, (print head assembly #24) and a mechanism for moving a support to and from the monomer addition station and a flow cell (scanning transport, #22 and treating transport #23) wherein the mechanism comprises a robotic arm (computer controlled transport arms, page 74, lines 8-31) and a holding element comprising a grasping element (grooved vacuum chuck , page 61, lines 21-32 and page 66, line 25-page 67, line 8). Blanchard teaches the apparatus comprises a controller for controlled movement of the mechanism (computer controlled transport arms, page 74, lines 8-31). Blanchard further teaches the computer comprises software programs for moving and positioning the support between various components via the transporters (page 69, lines 15-25, page 70, line 28-page 71 and Fig. 11) and specifically teaches repeatedly moving the substrate between the print head assembly and flow cell (page 71, lines 3-5 and Page 72, line 27-page 73-17).

Furthermore, the claim recites "another flow cell", but does not define another flow cell as a different (i.e. physically distinct) flow cell. Because Blanchard teaches the structural requirements and computer-controlled transporter for repeated movement of the substrate into flow cells, Blanchard teaches all the structural elements required by the claim. Alternatively,

it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to provide the transporters of Blanchard with a program to move the substrate from one flow cell into different flow cell. Blanchard teaches the method of synthesis in Example 2, which substrate treatments include 19 iterations of rinsing steps with intervening dipping and/or submerging steps. This clearly suggests that the substrates are transported to different flow cells for the (b) acetonitrile rinsing, (c) oxidation, (d) acetonitrile rinsing, (e) dimethoxytrityl deprotecting and (f) acetonitrile rinsing steps.

Blanchard discloses an apparatus for biopolymer array synthesis (Fig. 5), wherein the apparatus comprise a holding element comprising a grasping element (grooved vacuum chuck , page 61, lines 21-32 and page 66, line 25-page 67, line 8) but is silent regarding finger-like projections on the vacuum chuck. However, Zuckerman teach the similar device wherein the preferred robotic arm has finger-like grippers (page 15, lines 1-11, as per Claim 45).

Zuckerman teaches an apparatus for polymer synthesis comprising a plurality of flow cells, each comprising a holder for support, the apparatus further comprising fluid dispensing stations, a robotic arm for moving a support to and from flow cells for monomer addition and wherein the robotic arm has grasping elements (page 15, lines 1-11) and wherein the apparatus further comprises a manifold in fluidic communication with the flow cells (page 17, lines 1-13) and a controller having a program configured for moving the robotic arm so as to transfer the support from one flow cell to a different flow cell (page 17-20, Fig. 6-7). Zuckerman further teaches the multiple flow cell apparatus with programmed transfer of supports provides automated synthesis of equimolar amounts of mixed-sequence biopolymers that ensures complete subunit coupling with minimal time (page 21).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to provide the transporters of Blanchard with a program to configured to move the substrate from one flow cell into different flow cell. Blanchard teaches the method of synthesis in Example 2, which substrate treatments include 19 iterations monomer addition

including rinsing steps with intervening dipping and/or submerging steps. This clearly suggests that the substrates are transported to different flow cells for the (b) acetonitrile rinsing, (c) oxidation, (d) acetonitrile rinsing, (e) dimethoxytrityl deprotecting and (f) acetonitrile rinsing steps. Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was modify the computer-controlled transporters of Blanchard with the program configuration of Zuckerman so as to transport the support from one flow cell to a different flow cell to thereby provide for automated synthesis of equimolar amounts of mixed-sequence biopolymers with complete subunit coupling with minimal time as taught by Zuckerman (page 21).

Blanchard and Zuckerman do not teach a purification system and sensor in communication with the outlet. However, automated synthesizers having column purification systems and sensors attached to flow cell outlets were well known in the art at the time the claimed invention was made as taught by Nokihara.

Nokihara teaches the apparatus wherein expensive and toxic reagents are recycled via a purification column (Column 4, lines 19-27) in communication with a sensor (pH sensor, Column 3, lines 58-67) valve switch (Column 4, lines 28-33) and holding chamber (e.g. fraction collector F, Column 3, lines 1-11). Nokihara teaches the purification system reduces costs by "significantly" reduces the amount of starting material consumed and environmentally destructive waste produced (Column 4, lines 34-44). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the sensor and purification system in the synthesizer of Nokihara to the synthesizer of Blanchard and/or Zuckerman. One of ordinary skill in the art would have been motivated to do so for the expected benefits of reducing costs by "significantly" reducing the amount of starting material consumed and environmentally destructive waste produced (Column 4, lines 34-44).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 30-31, 33-34, 39 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 23-28 of copending Application No. 10/172,470 in view of Blanchard (WO 98/41531, published 24 September 1998) or Zuckerman (WO 91/17823). Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to flow cell devices comprising a flow cell housing a substrate, fluid dispensing manifold, stations for reagent delivery and mechanical means for moving the support. The claim sets merely differ in that the '470 claims are further drawn to a vacuum source. However, the instant claim language "comprising" encompasses the additional element of the '470 claims. The claim sets further differ in that the instant claims define a computer program for programmed transport of the substrate. Blanchard teaches programmed substrate transport whereby methods of oligomer synthesis are fully automated as preferred in the art (page 56, lines 4-9) and Zuckerman teaches programmed movement of the robotic arm for transport substrates from one flow cell to a different flow cell (page 17-20, Fig. 6-7). It would have been obvious to one

of ordinary skill in the art at the time the claimed invention was made to apply the programmed substrate movement of Blanchard and/or Zuckerman to the '470 apparatus. One of ordinary skill in the art would have been motivated to do so for the expected benefit of obtaining fully automated oligomer synthesis as preferred in the art (Blanchard, page 56, lines 4-9).

This is a provisional obviousness-type double patenting

10. Claims 30, 32-39, 44-49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,846454 in view of Blanchard (WO 98/41531, published 24 September 1998) or Zuckerman (WO 91/17823).

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to an apparatus for conducting chemical synthesis, the apparatus comprising a flow cell, fluid dispensing means, a manifold, a mechanism for moving a support and a controller for movement of the mechanism. The claim sets merely differ in the arrangement of limitations within the claims e.g. the movement mechanism and controller are recited in dependent embodiments of the patent claims. The claim sets further differ in that the instant claims define the apparatus as having a plurality of flow cells while the patent claims define a "chamber". However, the patent defines the preferred embodiment of the chamber as having multiple flow cells (312a-321e, Column 14, lines 50-66). Therefore, the instantly clamed flow cells are an obvious embodiment of the patent chamber.

The claim sets further differ in that the instant claims define a computer program for programmed transport of the substrate. Blanchard teaches programmed substrate transport whereby methods of oligomer synthesis are fully automated as preferred in the art (page 56, lines 4-9) and Zuckerman teaches programmed movement of the robotic arm for transport

substrates from one flow cell to a different flow cell (page 17-20, Fig. 6-7). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the programmed substrate movement of Blanchard and/or Zuckerman to the patent apparatus. One of ordinary skill in the art would have been motivated to do so for the expected benefit of obtaining fully automated oligomer synthesis as preferred in the art (Blanchard, page 56, lines 4-9).

11. Claims 30, 32-39, 44-49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-33 of U.S. Patent No. 6,713,023 in view of Blanchard (WO 98/41531, published 24 September 1998) or Zuckerman (WO 91/17823).

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to an apparatus for conducting chemical synthesis, the apparatus comprising a flow cell, fluid dispensing means, a manifold, a mechanism for moving a support and a controller for movement of the mechanism. The claim sets merely differ in the arrangement of limitations within the claims. The claim sets further differ in that the patent claims further define a sealing member. However, the open claim language "comprising" recited in the instant claims encompasses the additional elements of the patent apparatus. Therefore, the instantly clamed flow cells are an obvious embodiment of the patent chamber. The claim sets further differ in that the instant claims define a computer program for programmed transport of the substrate. Blanchard teaches programmed substrate transport whereby methods of oligomer synthesis are fully automated as preferred in the art (page 56, lines 4-9) and Zuckerman teaches programmed movement of the robotic arm for transport substrates from one flow cell to a different flow cell (page 17-20, Fig. 6-7). It would have been obvious to one of ordinary skill in the art at the time the claimed invention

was made to apply the programmed substrate movement of Blanchard and/or Zuckerman to the '470 apparatus. One of ordinary skill in the art would have been motivated to do so for the expected benefit of obtaining fully automated oligomer synthesis as preferred in the art (Blanchard, page 56, lines 4-9).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
November 29, 2007